

Amendments to the Claims

1.(CURRENTLY AMENDED) A semiconductor device having a semiconductor body ~~(22)~~ comprising an active area ~~(7)~~ and a termination structure ~~(16)~~ surrounding the active area, the termination structure comprising a plurality of lateral transistor devices ~~(2a to 2d)~~ connected in series and extending from the active area towards a peripheral edge ~~(42)~~ of the semiconductor body, with a zener diode ~~(8)~~ connected to the gate electrode ~~(4)~~ of one of the lateral devices for controlling its gate voltage, such that a voltage difference between the active area and the peripheral edge is distributed across the lateral devices and the zener diode.

2. (CURRENTLY AMENDED) A semiconductor device of Claim 1 wherein a zener diode ~~(8)~~ is connected between each pair of adjacent lateral transistors ~~(2a to 2d)~~.

3. (CURRENTLY AMENDED) A semiconductor device of Claim 2 wherein each zener diode ~~(8)~~ is connected between the source electrode ~~(10)~~ of the lateral transistor of the corresponding pair closer to the active area ~~(7)~~ and the gate electrode ~~(4)~~ of the other lateral transistor of the corresponding pair.

4. (CURRENTLY AMENDED) A semiconductor device of Claim 2 wherein each zener diode ~~(8)~~ is connected between the gate electrodes ~~(4)~~ of the corresponding pair of lateral transistors.

5. (CURRENTLY AMENDED) A semiconductor device of ~~any preceding Claim~~ Claim 1 wherein each lateral device ~~(2a to 2d)~~ comprises a gate electrode ~~(31)~~ insulated from the semiconductor body ~~(22)~~ by a layer ~~(32)~~ of gate insulating material, the gate electrodes and layers of gate insulating material of the lateral devices being formed in the same respective process steps as insulated electrodes ~~(11)~~ and layers ~~(25)~~ of material insulating the insulated electrodes of devices in the active area ~~(7)~~.

6. (CURRENTLY AMENDED) A semiconductor device of Claim 5 wherein the active area ~~(7)~~ comprises trench-gate semiconductor devices and the lateral transistors of the termination structure ~~(16)~~ are trench-gate transistors.

7. (CURRENTLY AMENDED) A semiconductor device of ~~Claim 5 or Claim 6~~Claim 5 wherein each lateral device (~~2a to 2d~~) comprises a trench (~~30~~) having the gate electrode (~~34~~) therein, the trenches of the lateral devices being formed in the same respective process steps as gate trenches (~~20~~) of devices in the active area (~~7~~).

8. (CURRENTLY AMENDED) A semiconductor device of Claim 5 wherein the active area (~~7~~) comprises planar gate semiconductor devices and the lateral transistors of the termination structure (~~16~~) are planar gate transistors.

9. (CURRENTLY AMENDED) A semiconductor device of ~~any preceding Claim~~Claim 1 wherein the lateral devices (~~2a to 2d~~) include a region (~~15~~) of a first conductivity type over an underlying region (14a) of a second, opposite conductivity type, and wherein the active area (~~7~~) comprises devices having a region (~~15~~) of the first conductivity type which is formed in the same process step as the first conductivity type region of the lateral devices.

10. (CURRENTLY AMENDED) A semiconductor device of ~~any preceding Claim~~Claim 1 wherein the gate electrodes (~~34~~) of the lateral devices are formed of polycrystalline silicon, and the zener diode (~~8~~) is formed of polycrystalline silicon deposited in the same process step as the gate electrodes.

11. (CURRENTLY AMENDED) A method of forming a semiconductor device having a semiconductor body (~~22~~) comprising an active area (~~7~~) and a termination structure (~~16~~) surrounding the active area, the termination structure comprising a plurality of lateral transistor devices (~~2a to 2d~~) connected in series and extending from the active area towards a peripheral edge (~~42~~) of the semiconductor body, with a zener diode (~~8~~) connected to the gate electrode (~~4~~) of one of the lateral devices for controlling its gate voltage, such that a voltage difference between the active area and the peripheral edge is distributed across the lateral devices and the zener diode, wherein the gate electrodes (~~34~~) of the lateral devices are formed of polycrystalline silicon, and the method comprises forming the zener diode (~~8~~) of polycrystalline silicon deposited in the same process step as the gate electrodes.

12. (CURRENTLY AMENDED) A method of Claim 11 wherein each lateral device (~~2a to 2d~~) comprises a trench (~~30~~) having the gate electrode (~~34~~) therein, and the method

comprises forming the trenches of the lateral devices in the same respective process steps as gate trenches ~~(20)~~ of devices in the active area ~~(7)~~.